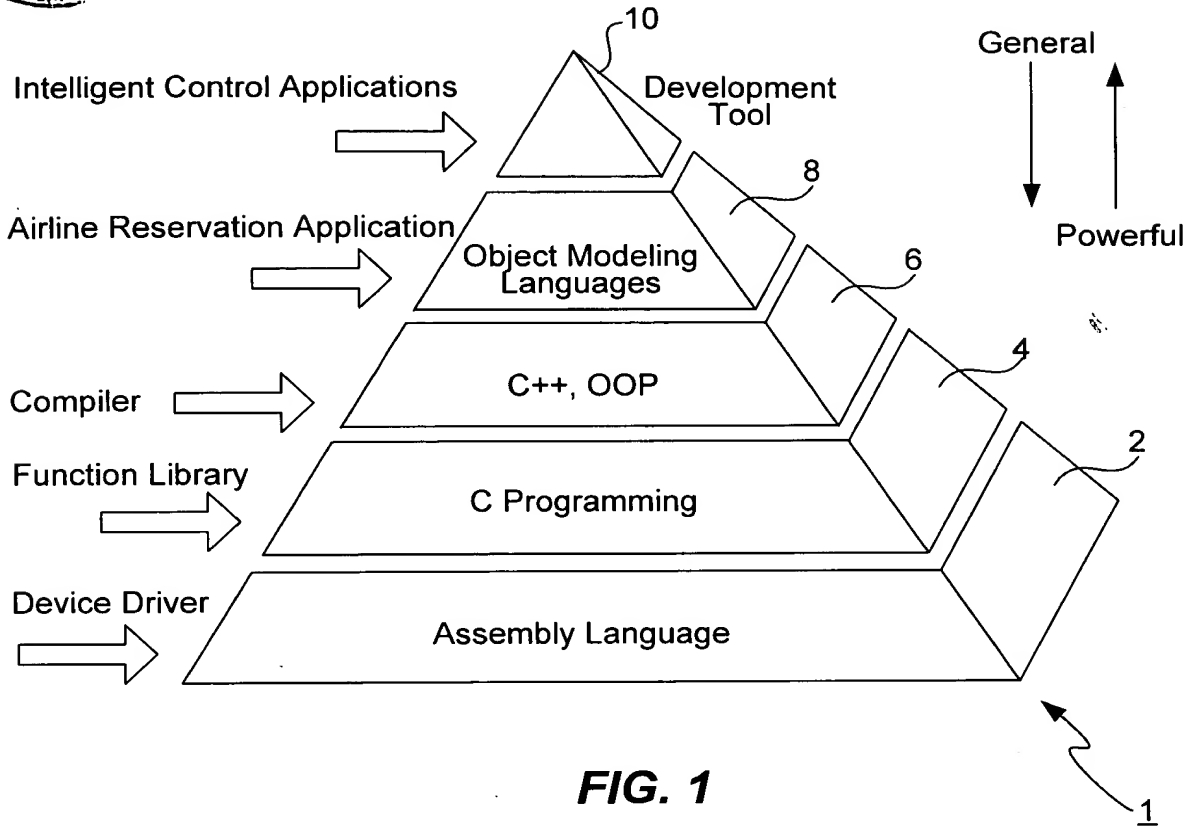




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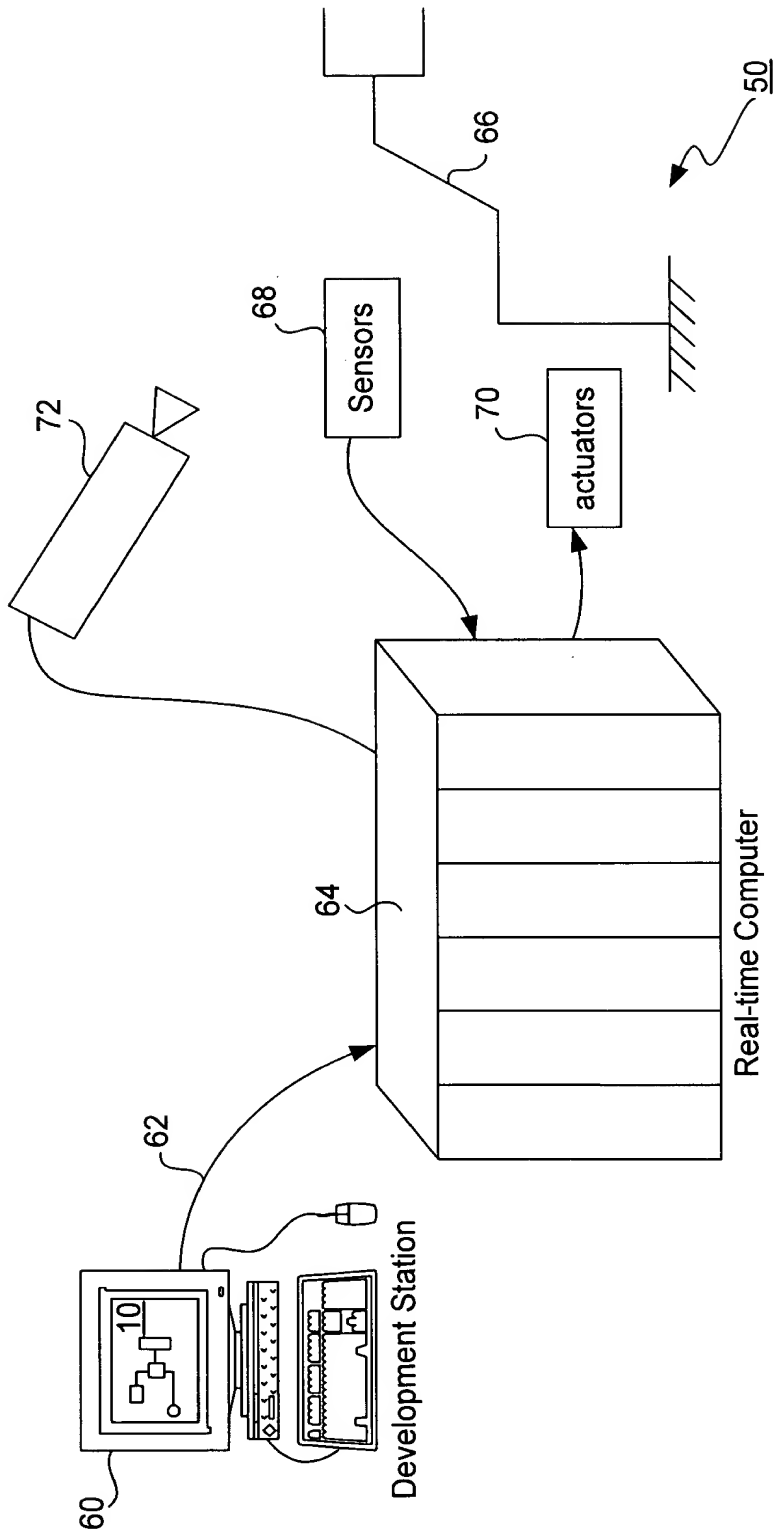


FIG. 2

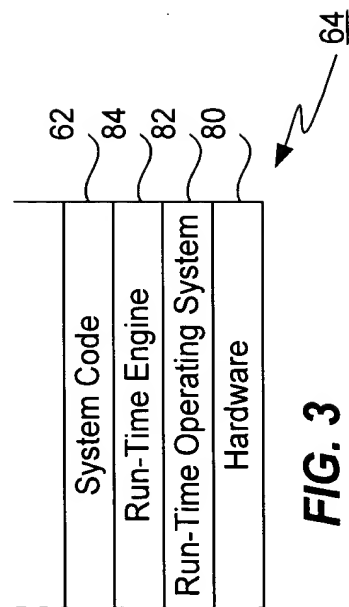
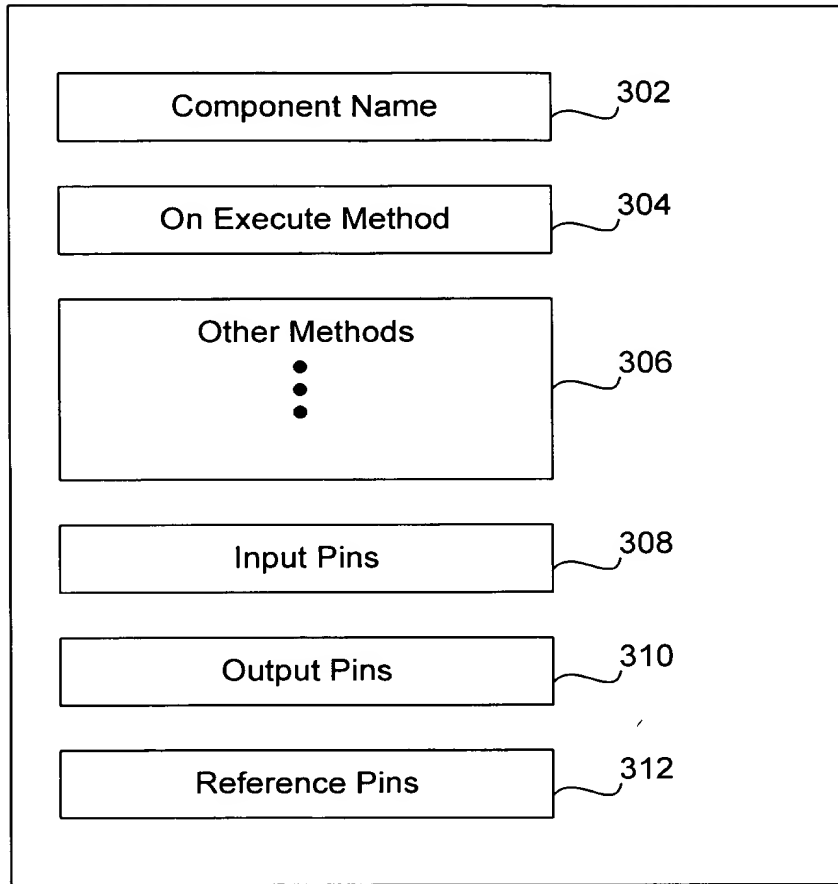


FIG. 3

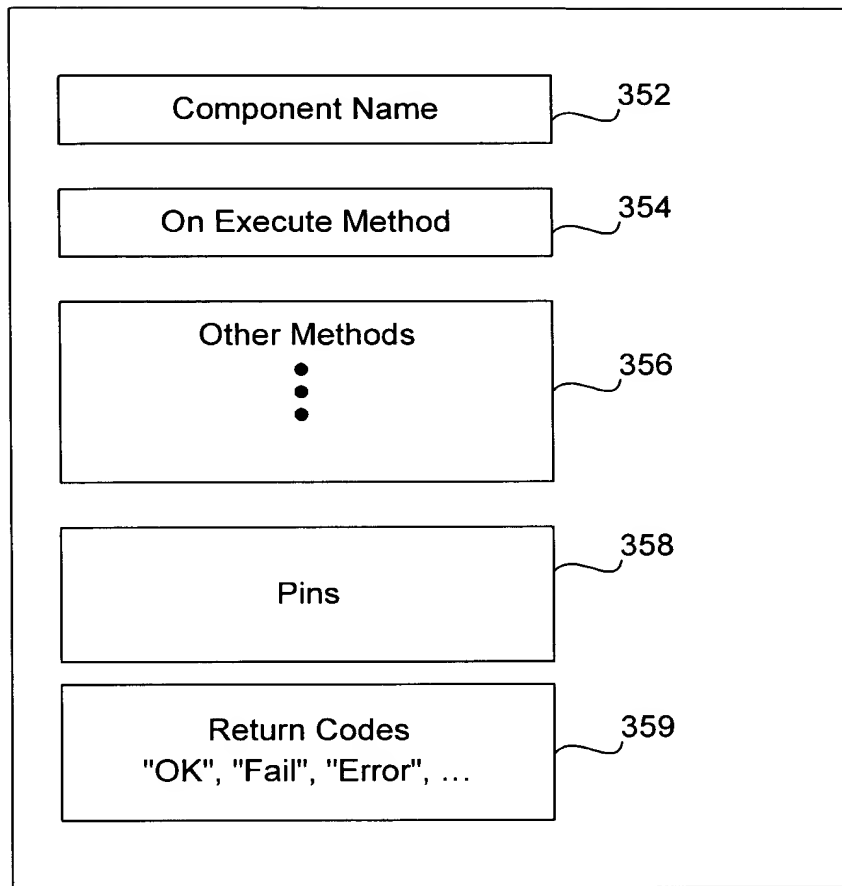


Data Flow Component

300

**FIG. 4**

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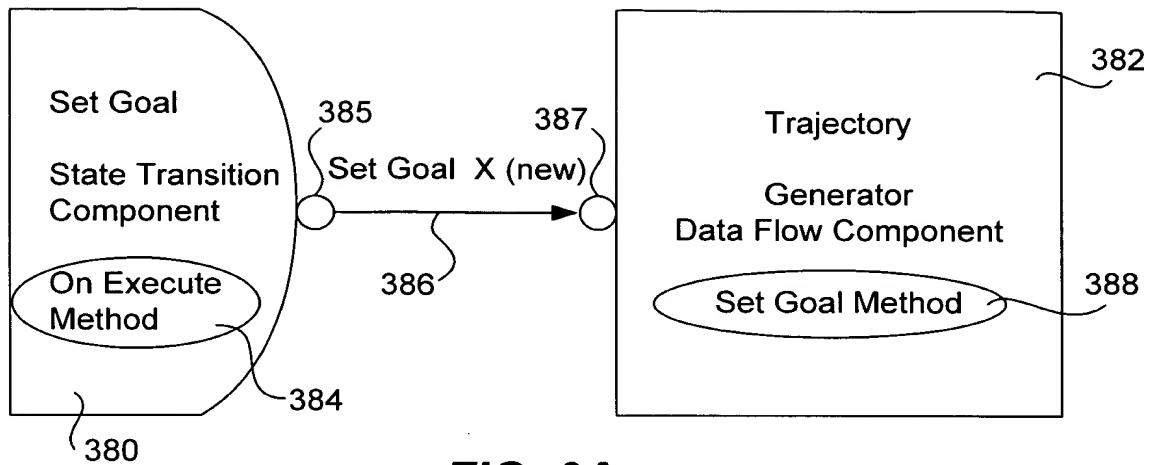


State Transition Component

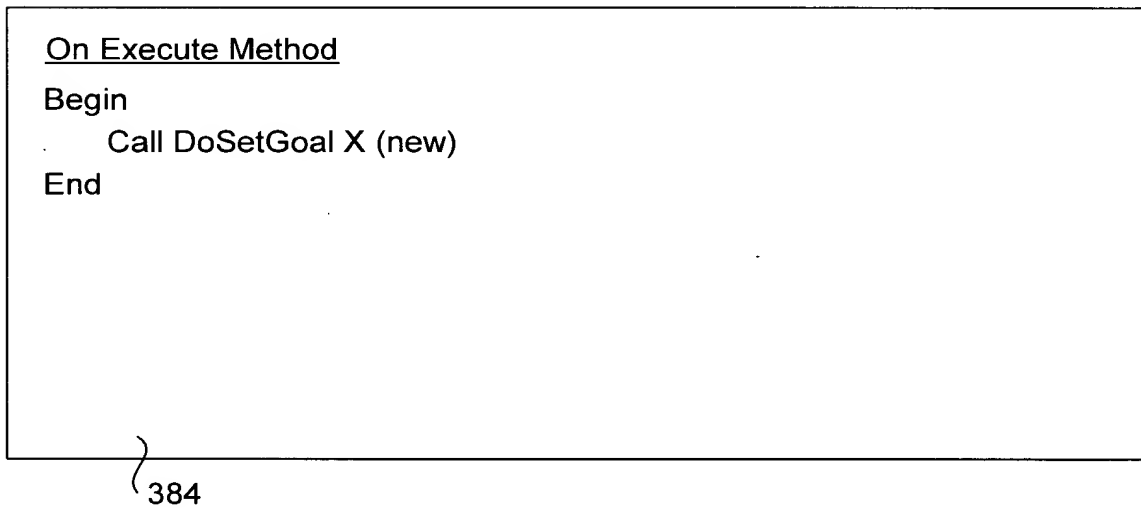
350

**FIG. 5**

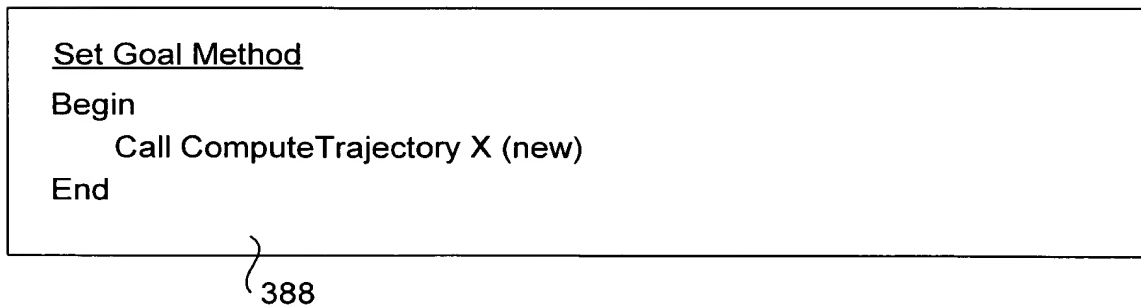
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**FIG. 6A**



**FIG. 6B**



**FIG. 6C**

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# State Machine Component

450

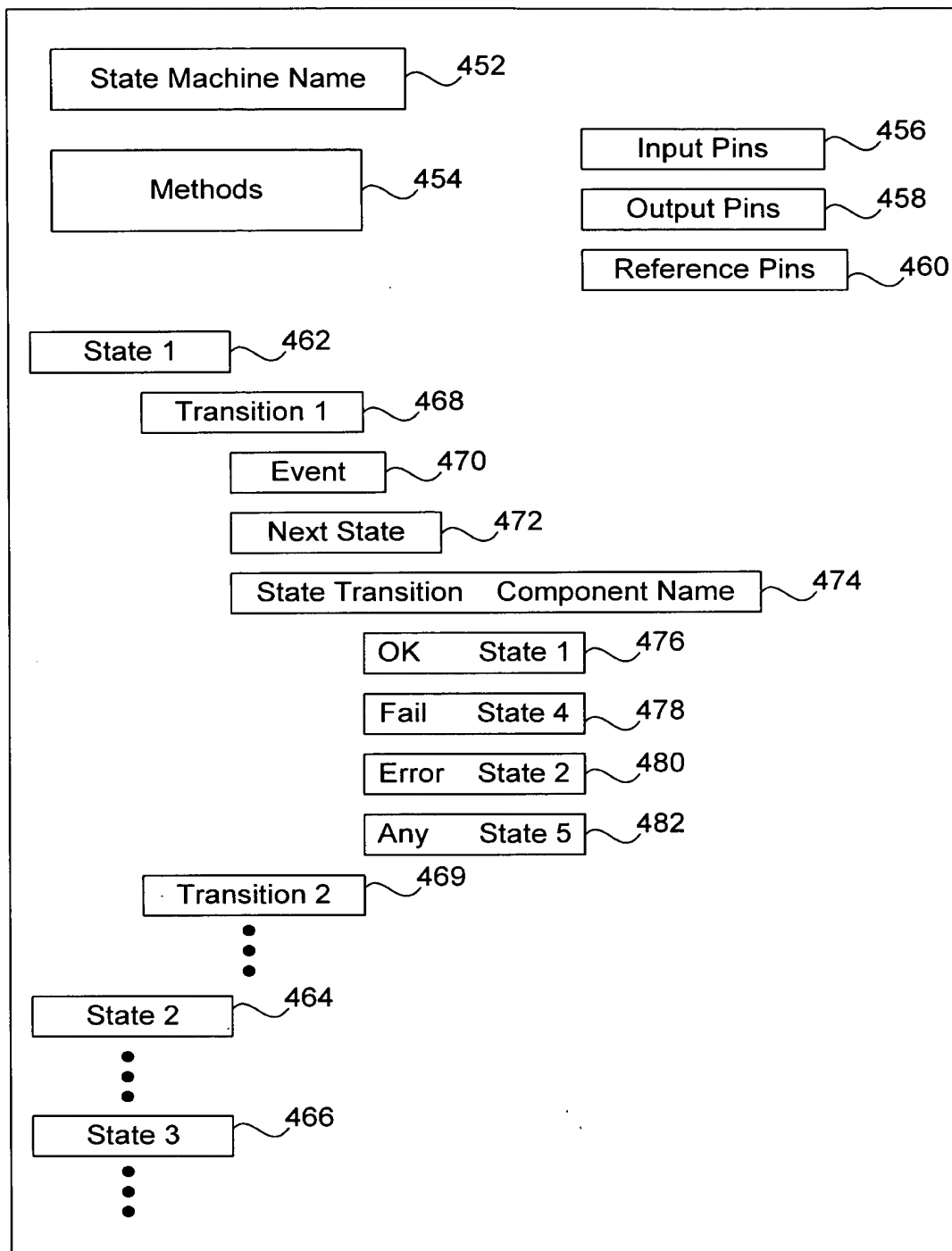
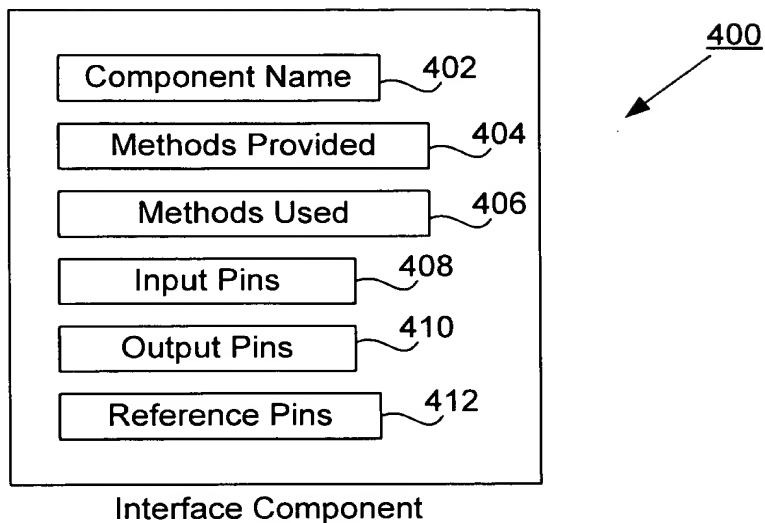


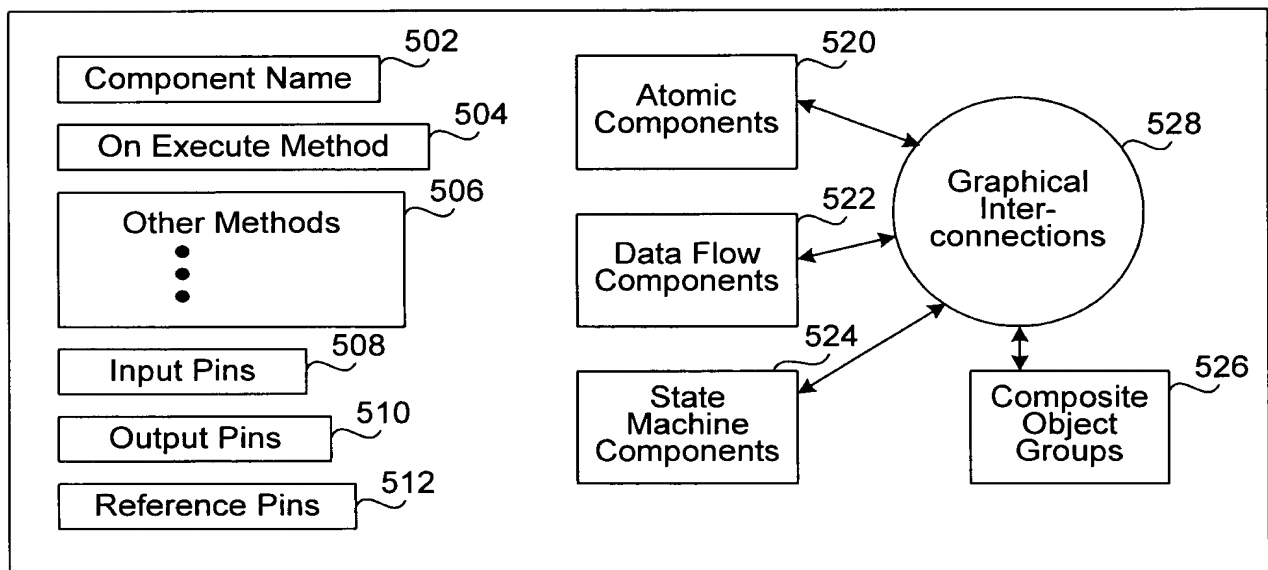
FIG. 7

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Interface Component

**FIG. 8**

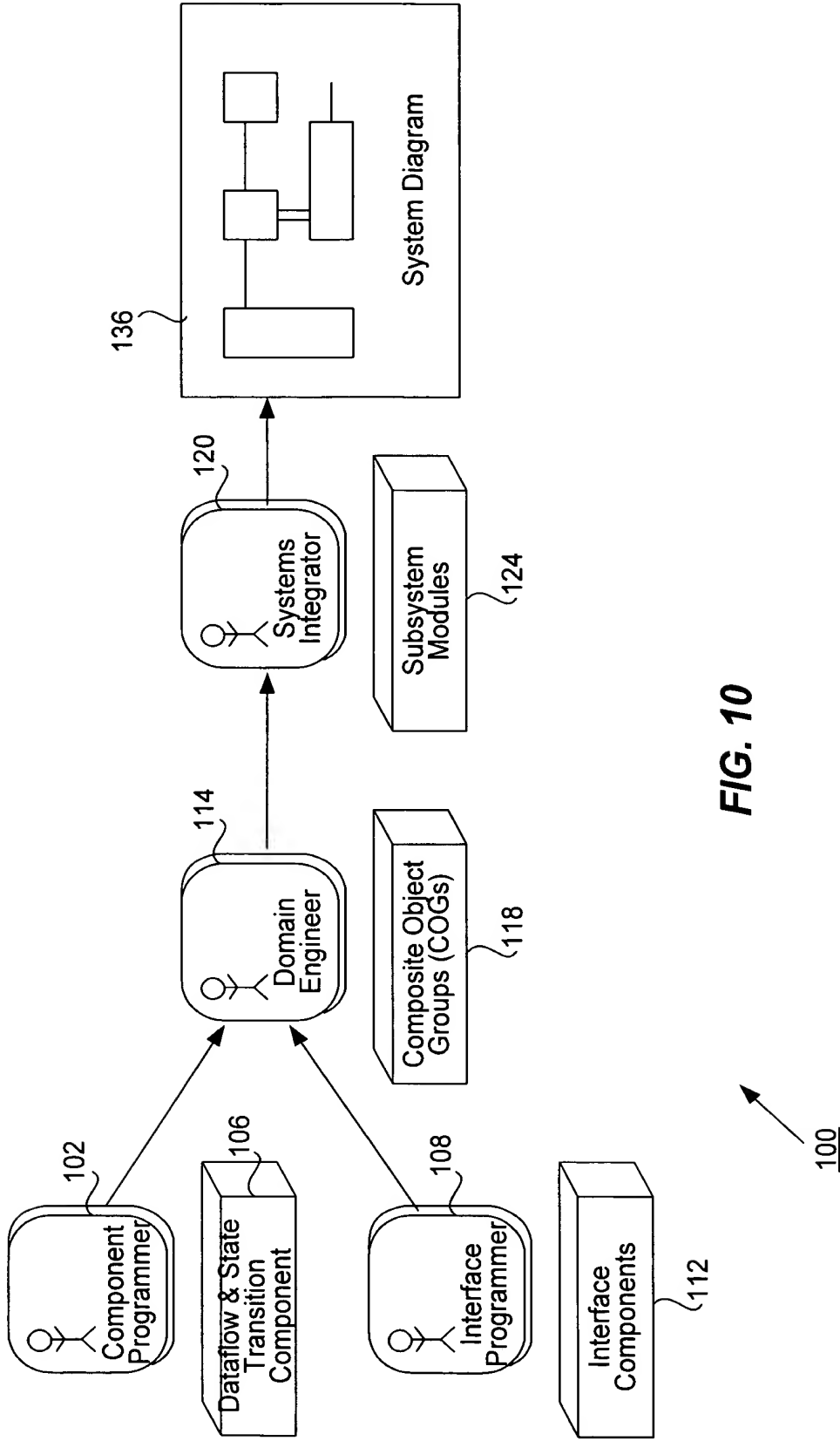


Composite Object Group

**FIG. 9**

500

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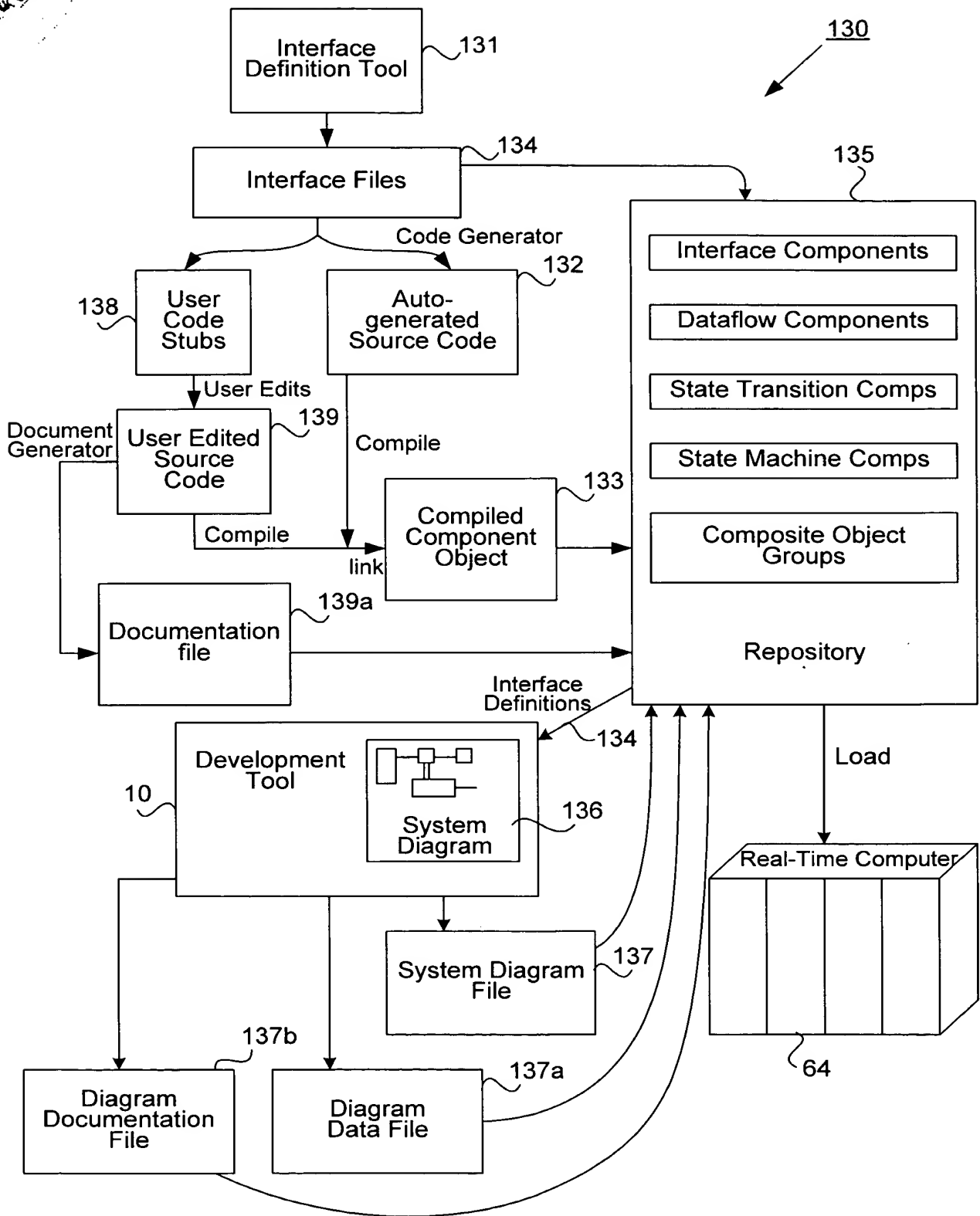
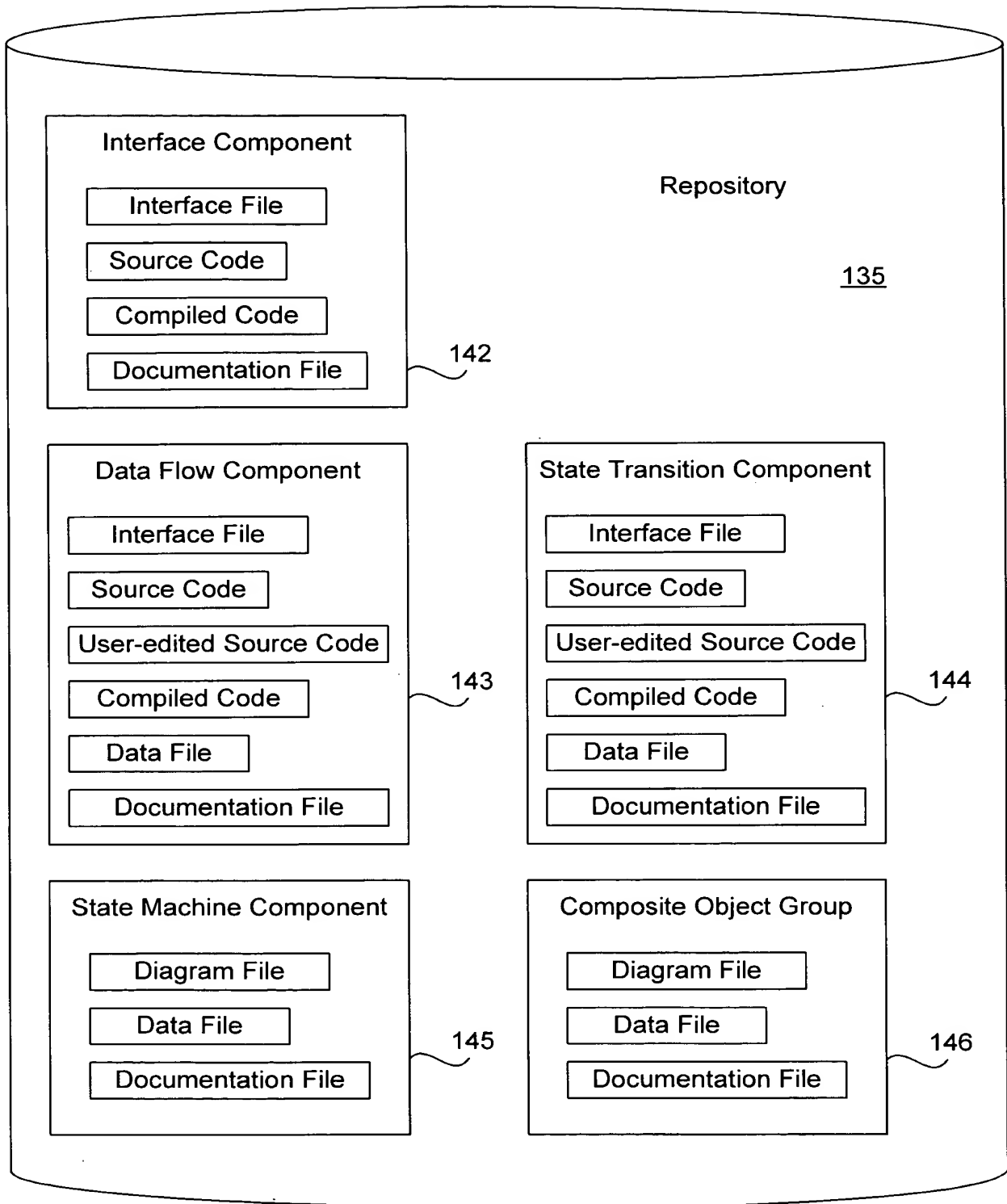


FIG. 11A



**FIG. 11B**

Procedural Model ↔ Object Model

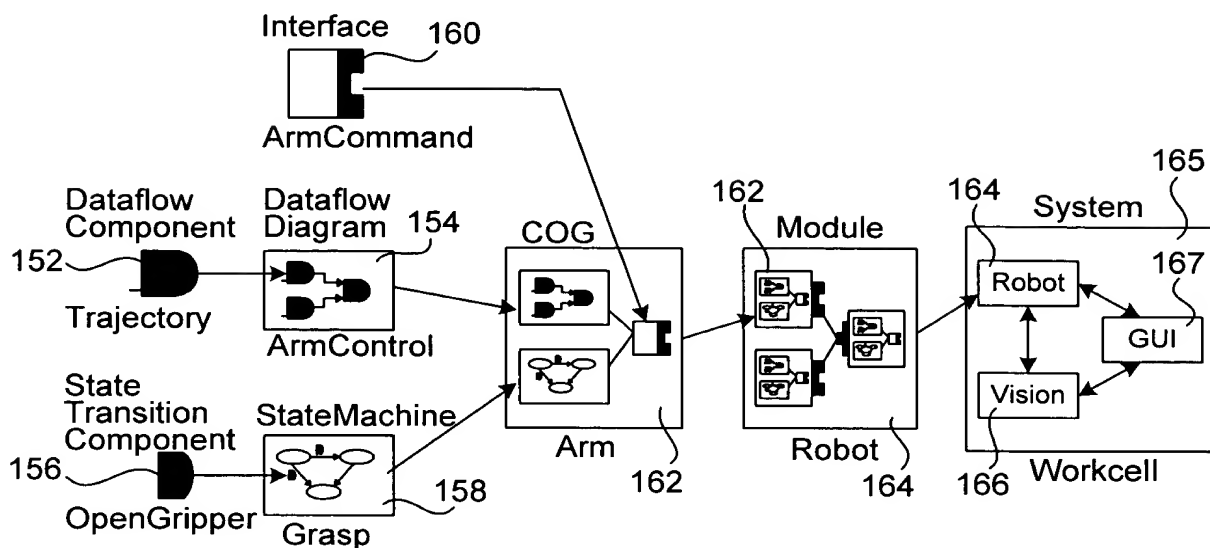


FIG. 12

150

Procedural Model ↔ Object Model

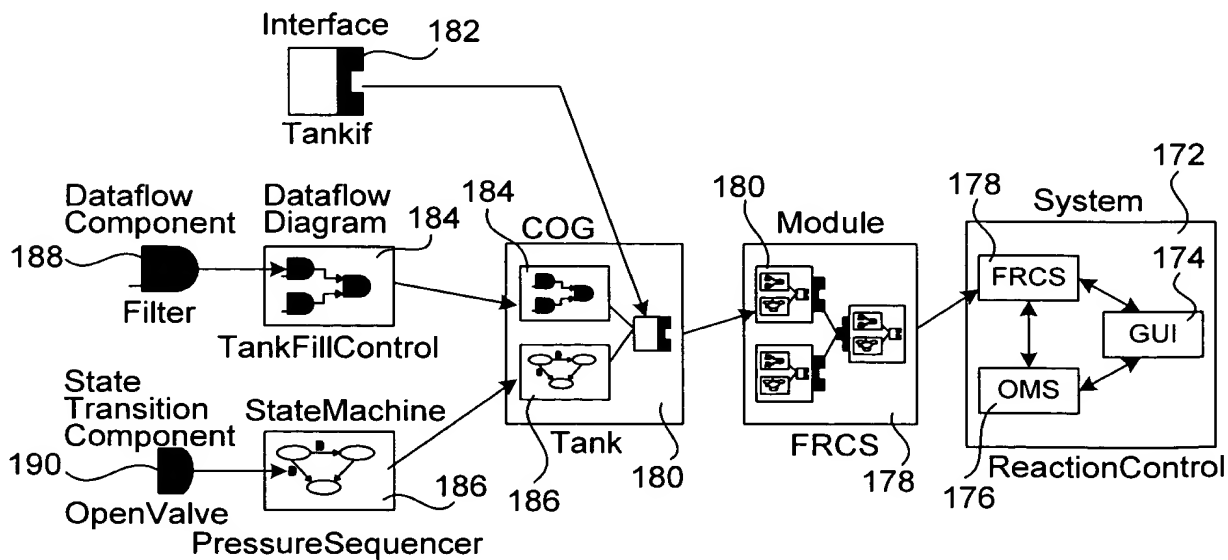


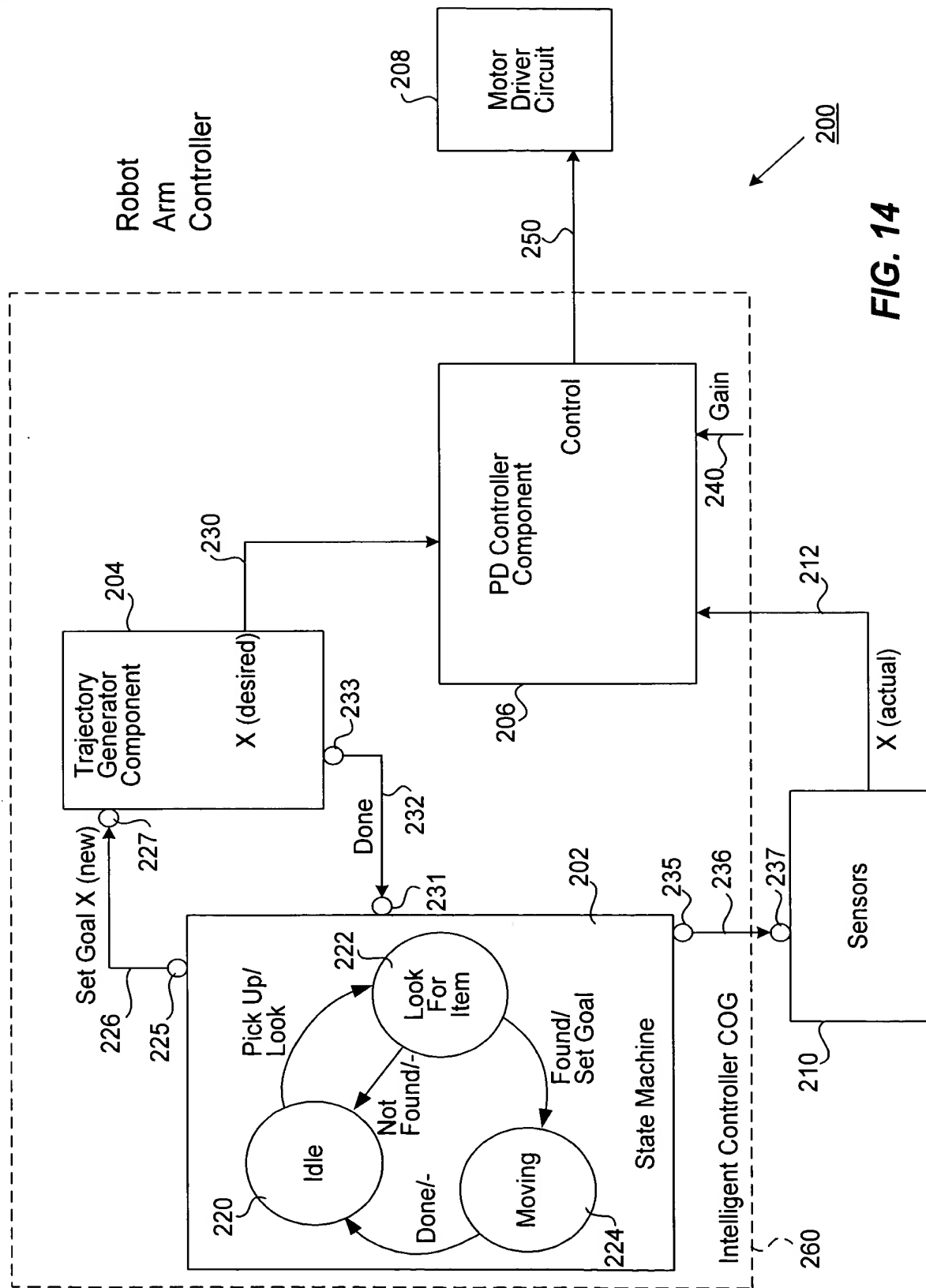
FIG. 13

170

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<u>Methods</u>	
provides	Set Goal (X)
uses	Done ( )
<u>Pins</u>	
output	X (desired)

Trajectory Generator Interface

**FIG. 15**

260

<u>Methods</u>	
<u>Pins</u>	
input	X (desired)
	X (actual)
reference	Gain
output	control

PD Controller Interface

**FIG. 16**

270

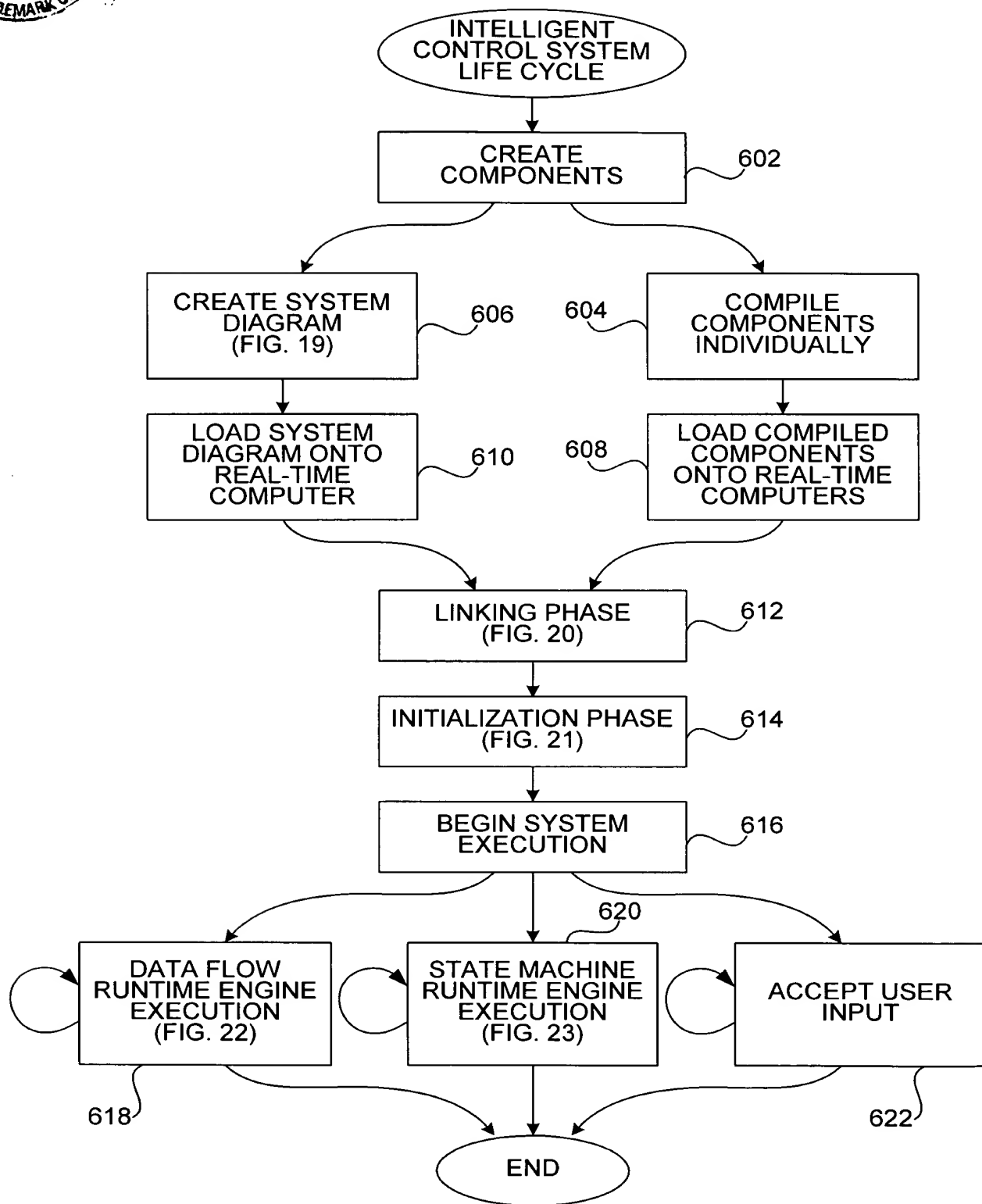
<u>Methods</u>	
provides	Pick Up (Item)
uses	doLook
<u>Pins</u>	
input	X (actual)
reference	Gain
output	control

Intelligent Control COG Interface

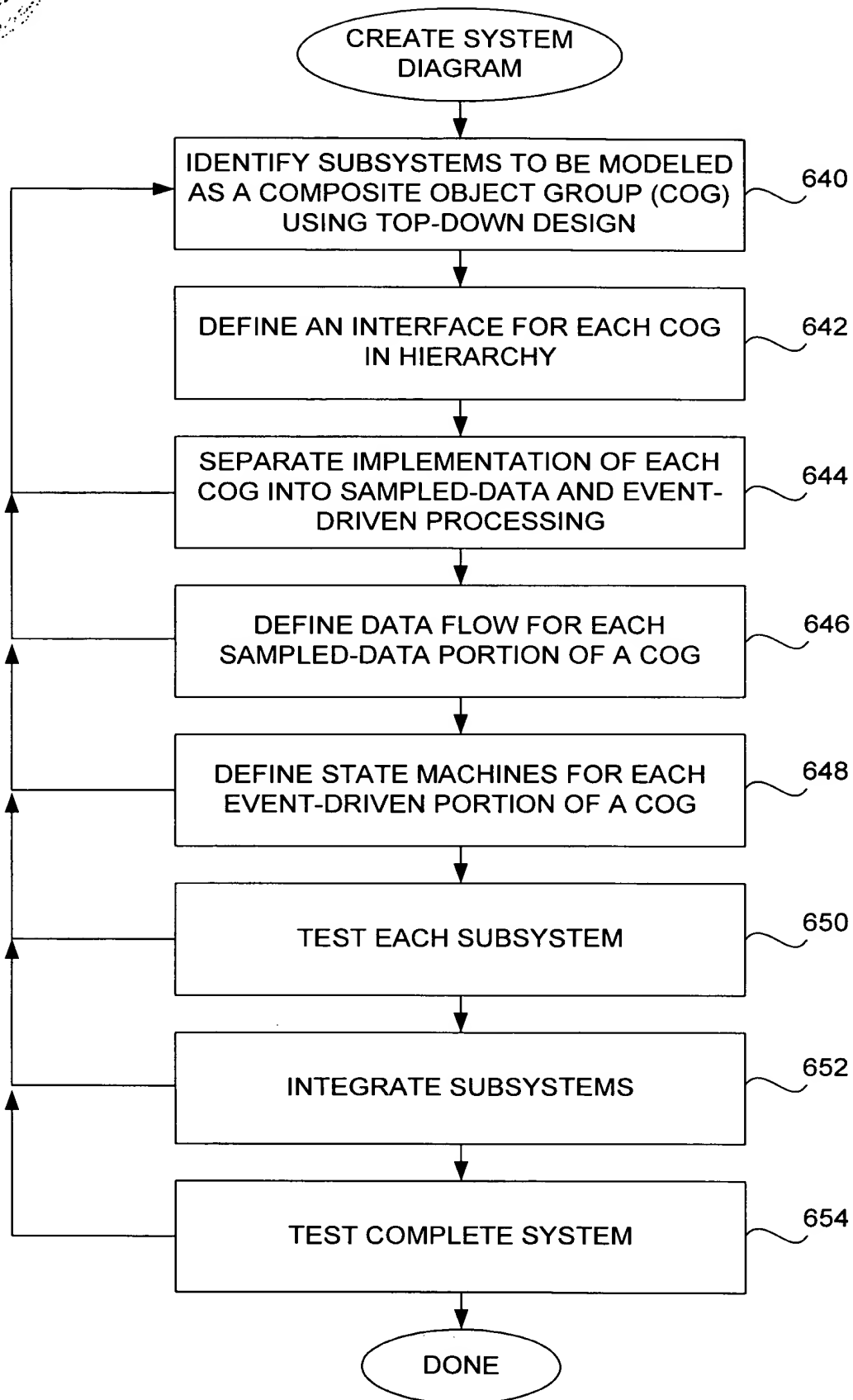
**FIG. 17**

280

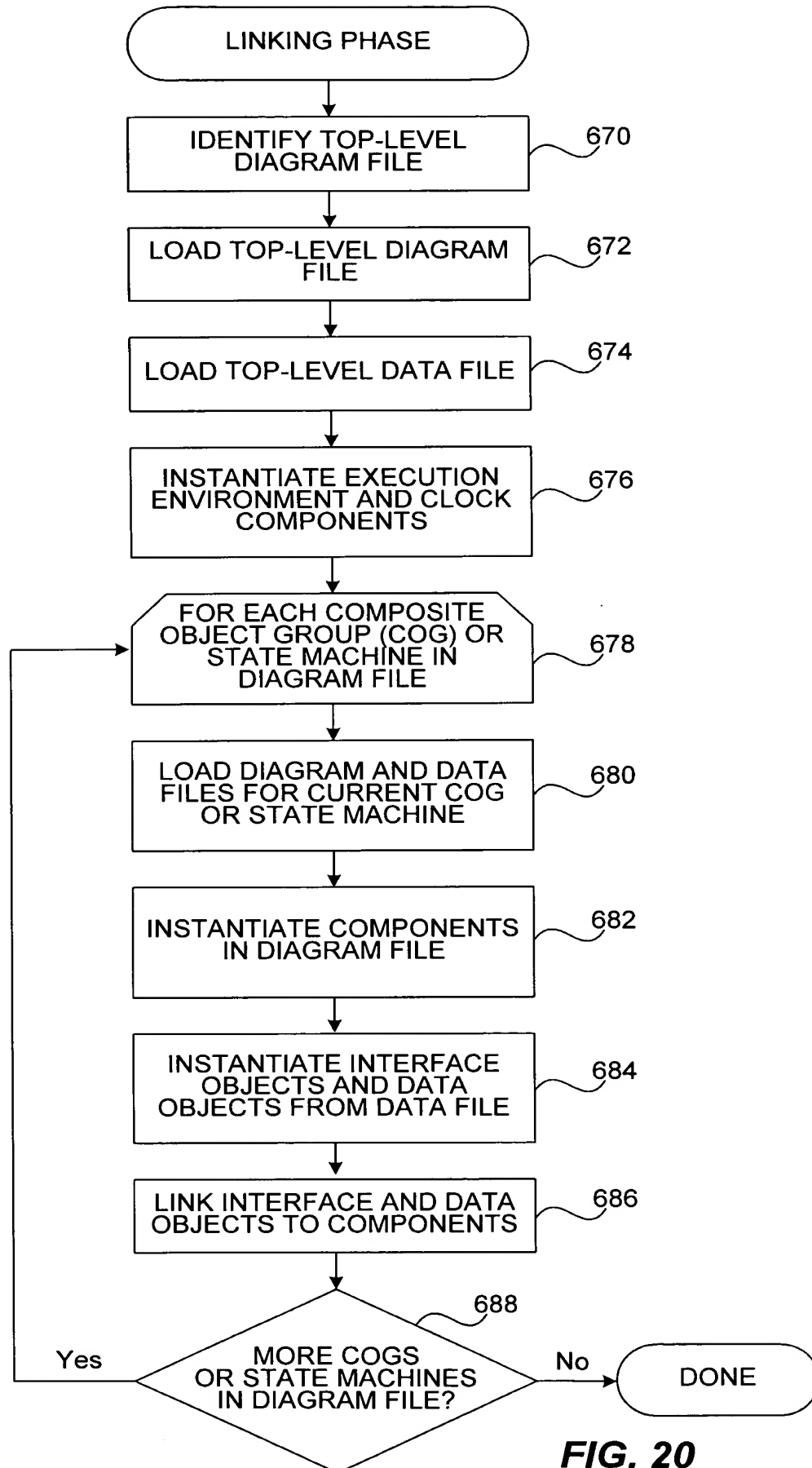
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**FIG. 18**

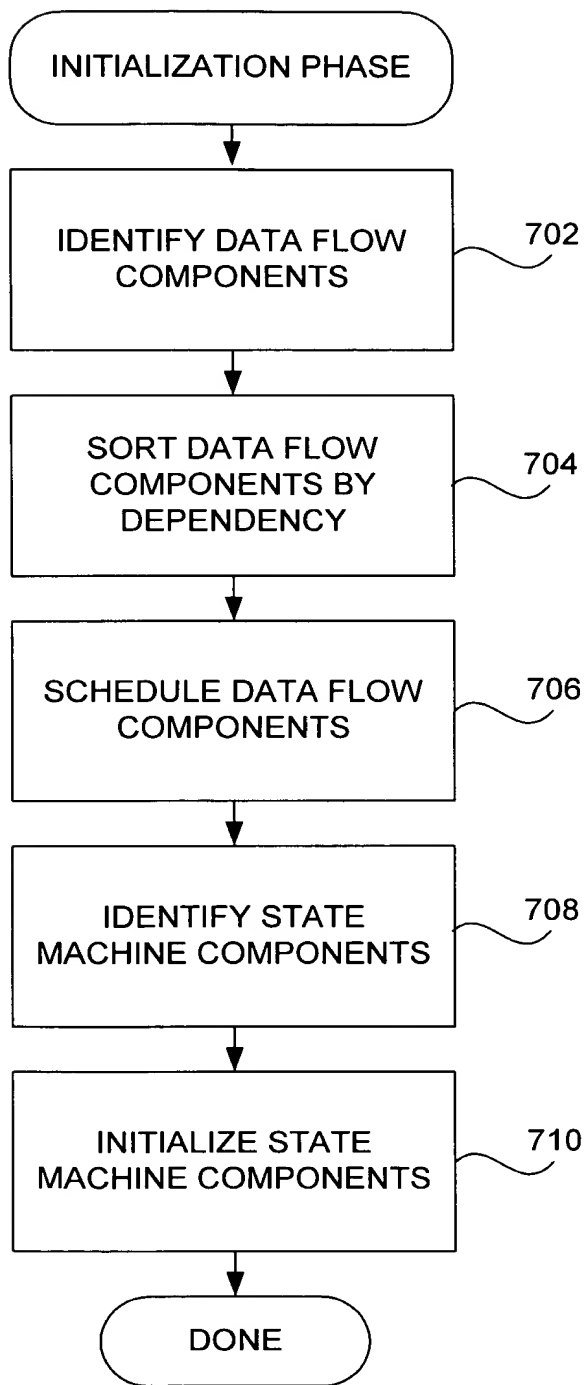


**FIG. 19**



**FIG. 20**





**FIG. 21**

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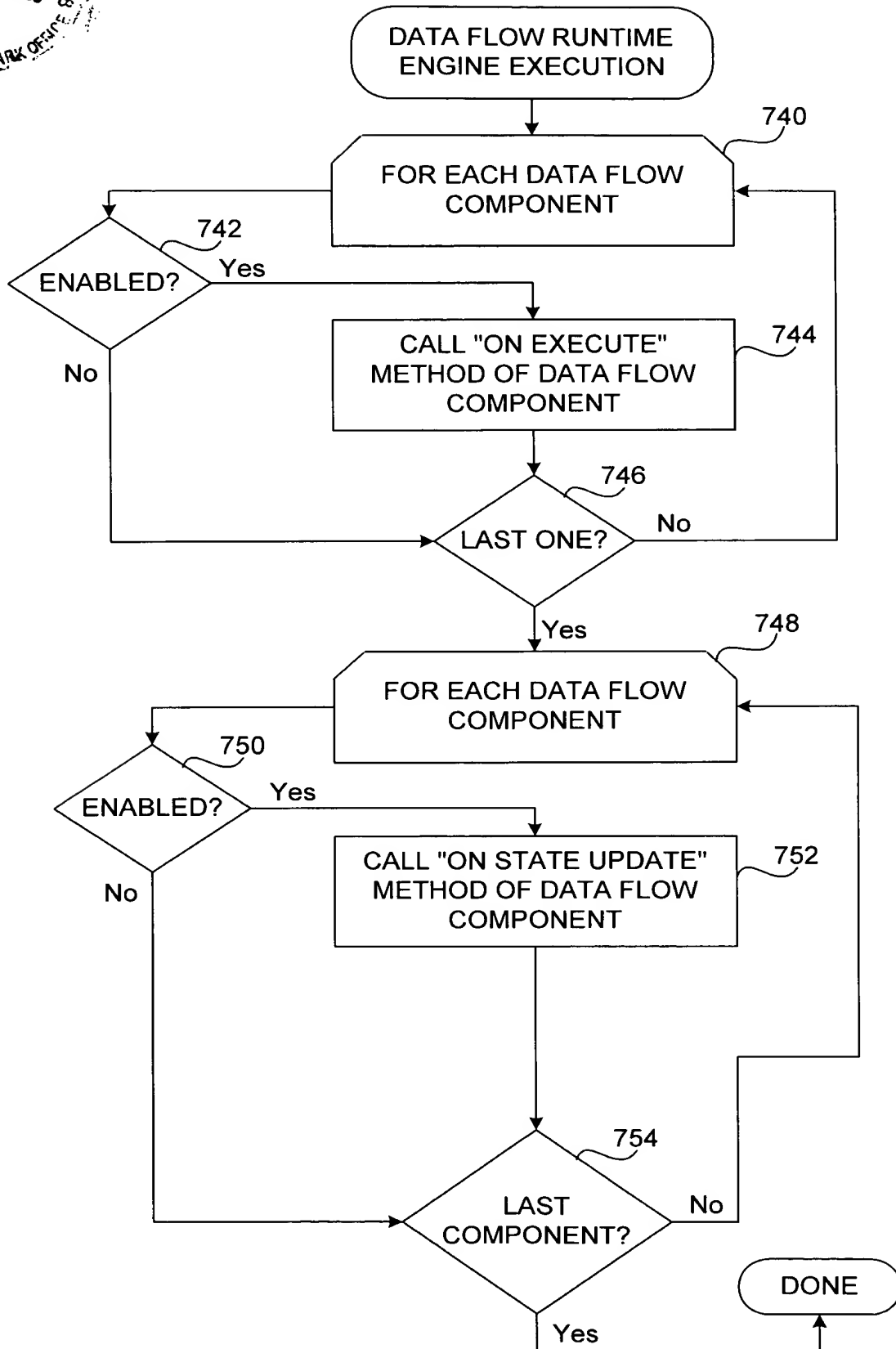
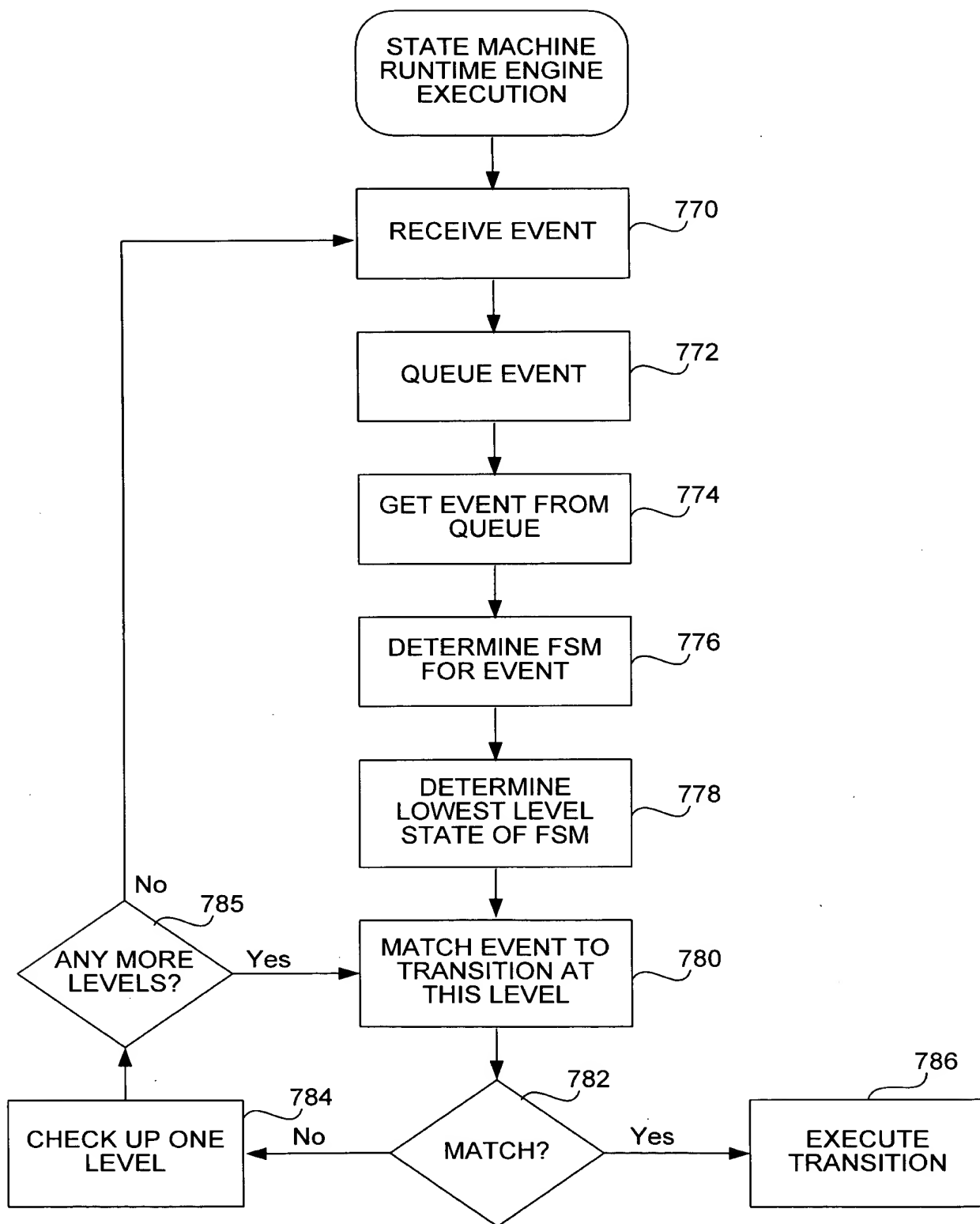


FIG. 22

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**FIG. 23**



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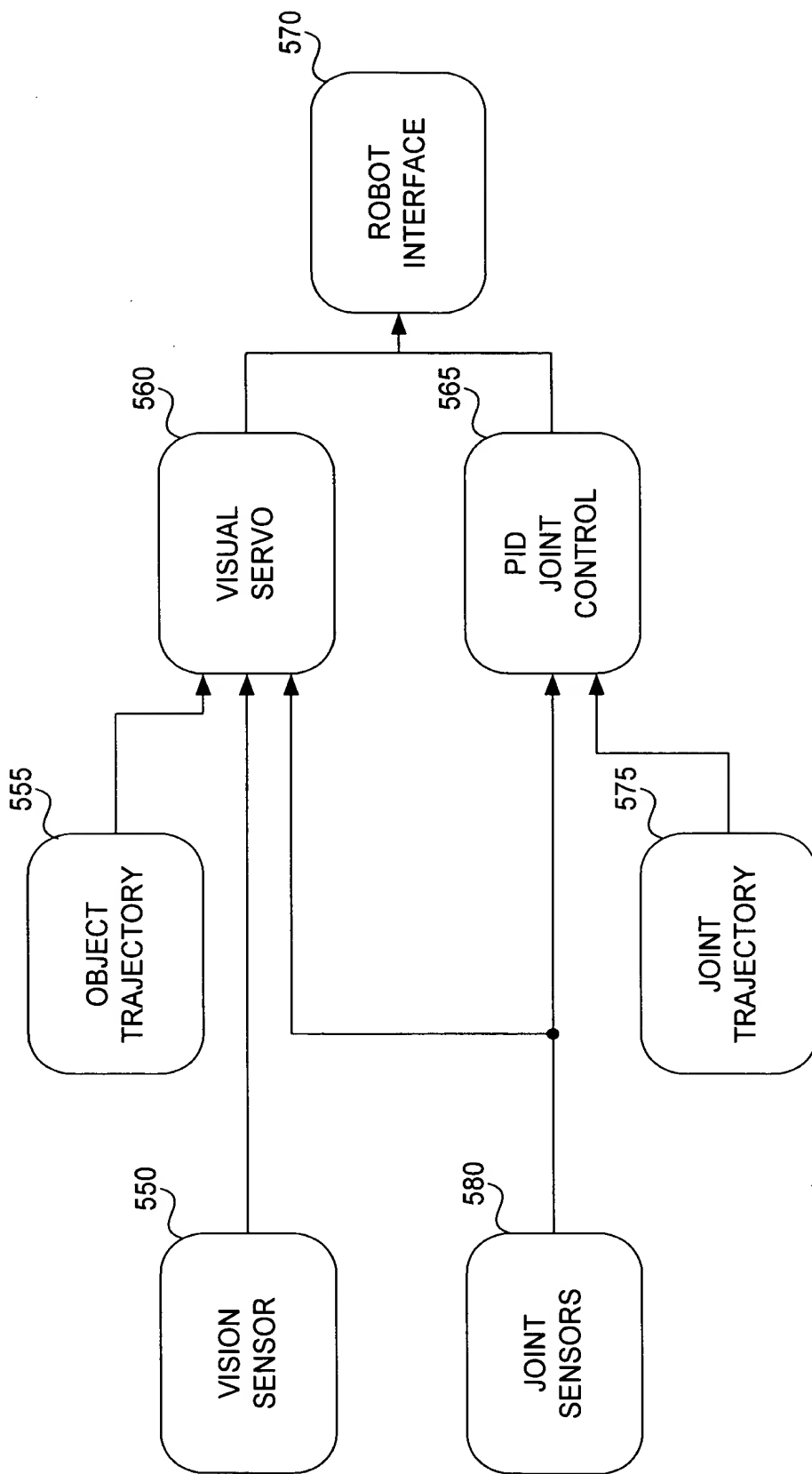


FIG. 24



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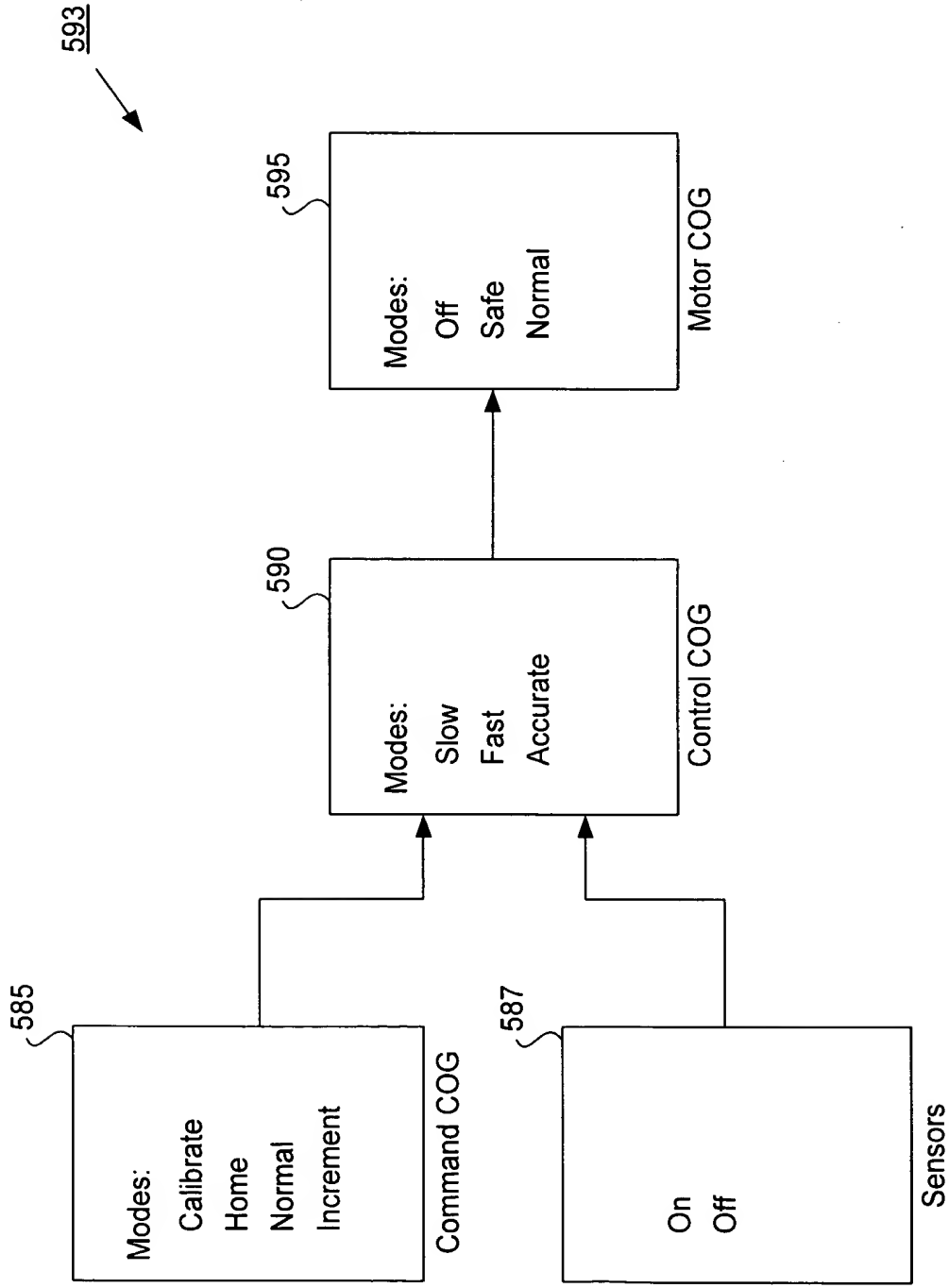
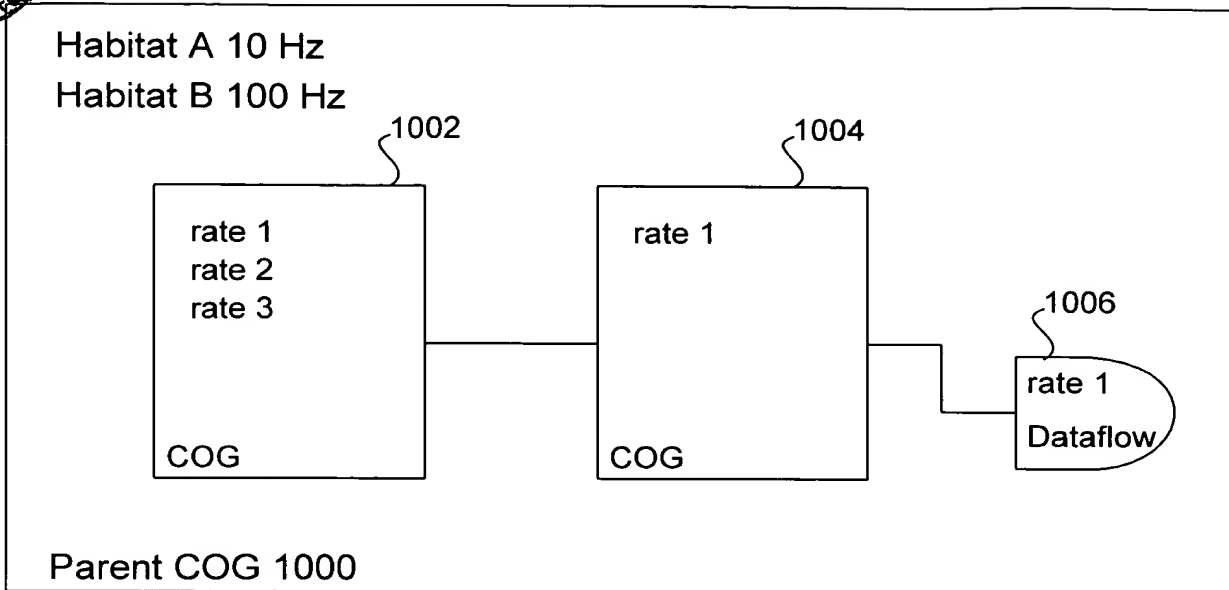
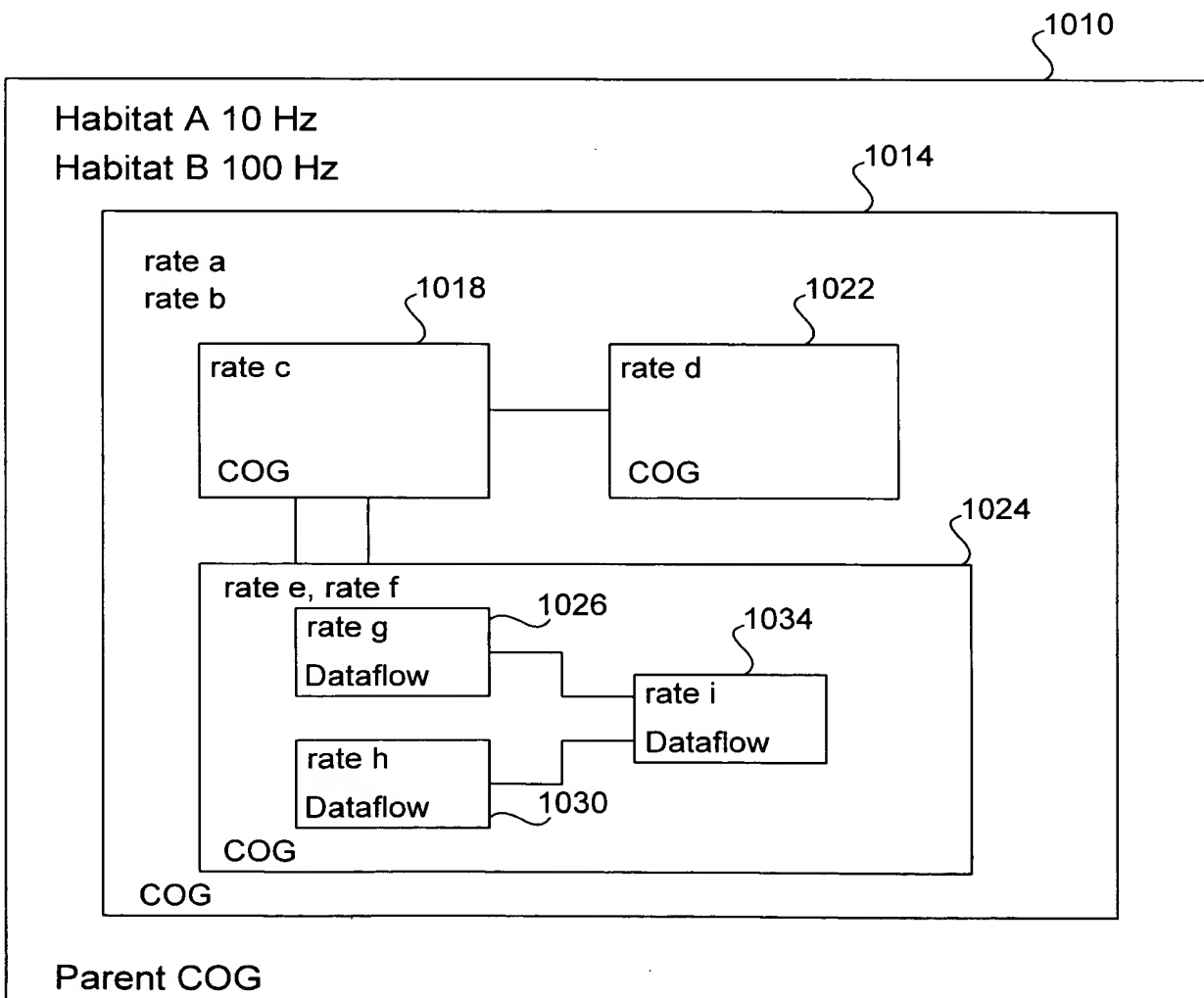


FIG. 25



**FIG. 26**



**FIG. 27**



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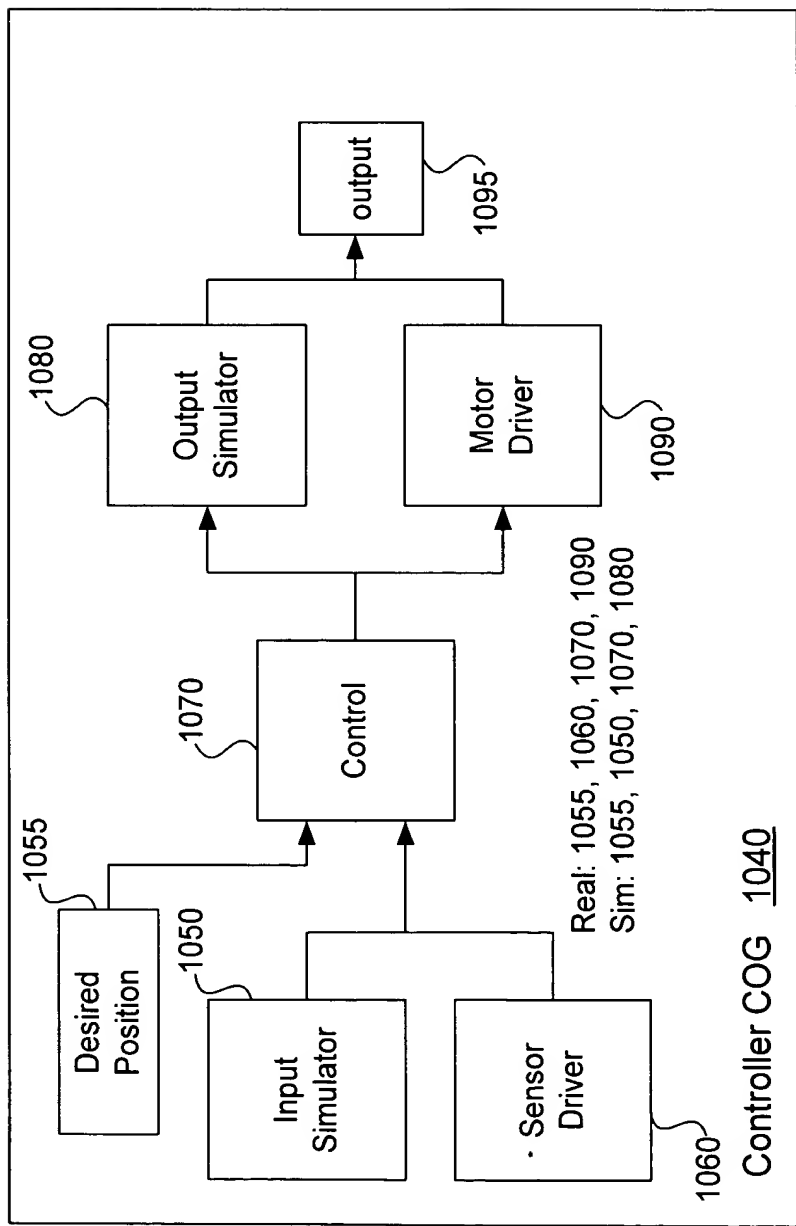


FIG. 28

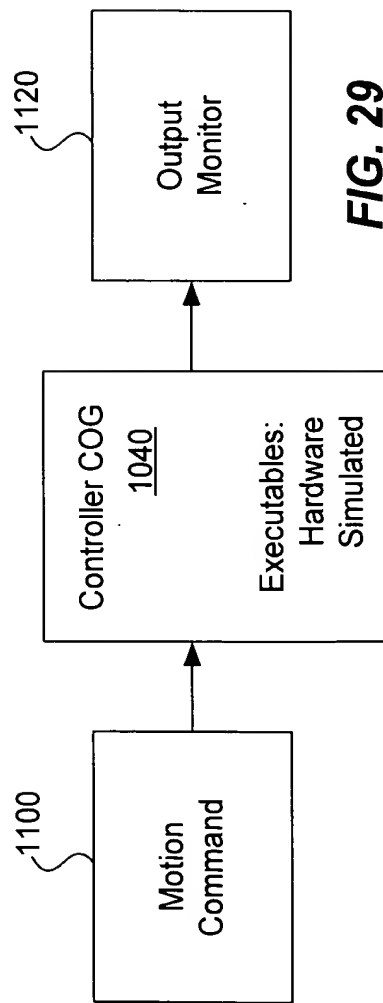
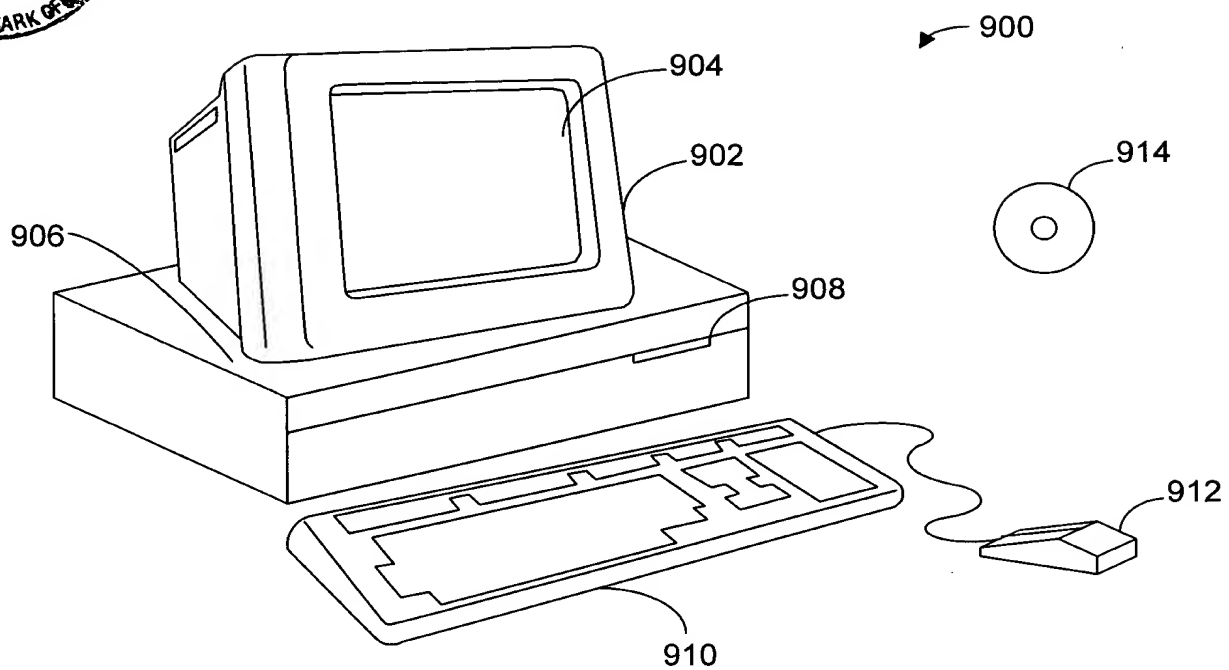
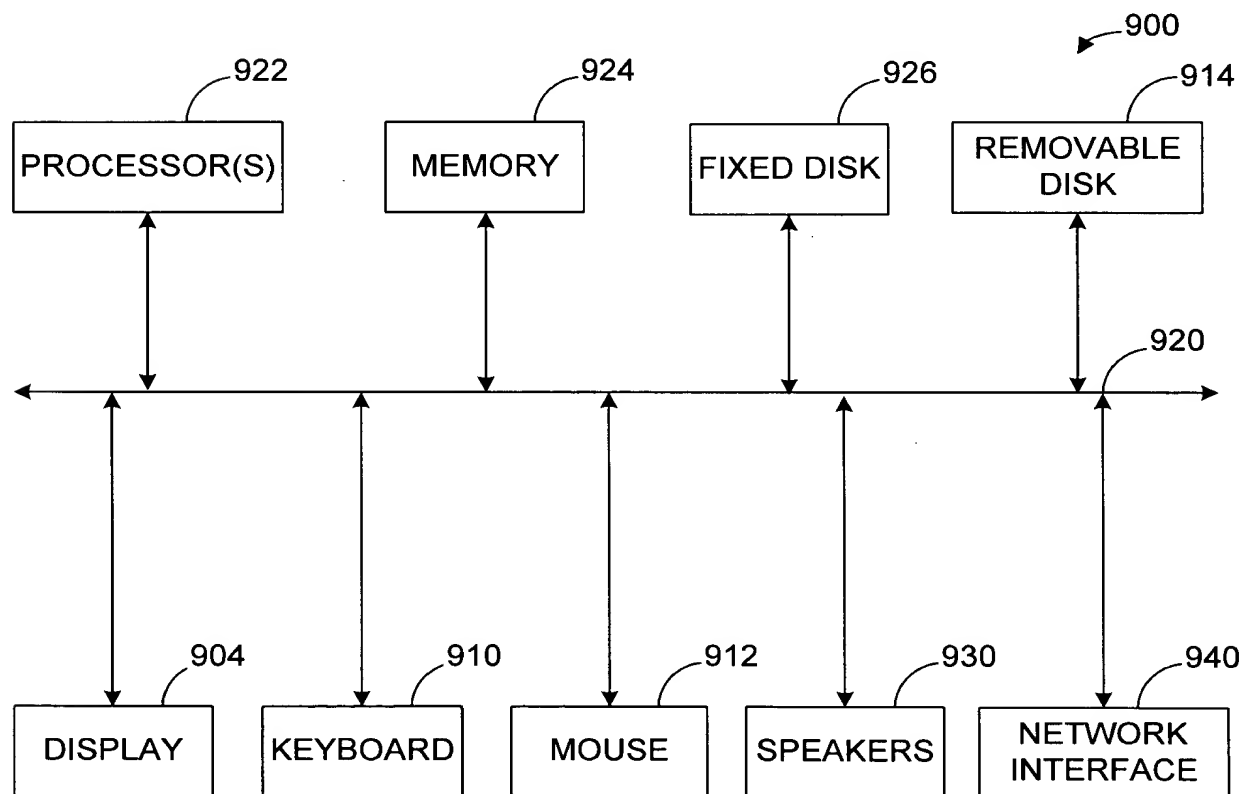


FIG. 29



**FIG. 30**



**FIG. 31**